

Modern Concepts of Cardiovascular Disease

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CARDIOVASCULAR SYPHILIS

The term cardiovascular syphilis refers in the great majority of instances to syphilis of the aorta and those conditions which are secondary to it. Syphilis of the aorta is, clinically, a late manifestation of the disease, appearing on the average from 15 to 20 years after the primary syphilitic infection. There are rare instances of a more rapid progression. It occurs roughly four to five times as commonly in males as in females, and is found in about 20% of syphilitic patients admitted to the wards of a general hospital.

Aortic syphilis occurs in three forms. The first is a simple aortitis which may produce very few symptoms and no physical signs. For this reason it commonly escapes early recognition. Progression of the lesion leads either to aortic insufficiency which is the commonest clinical form, or to aortic aneurysm or both. For practical purposes syphilis of the heart muscle need not be considered, for it is extremely rare, and generally when heart failure occurs as a result of syphilis, it is due to two factors: either insufficiency of the aortic valves; or involvement of the mouths of the coronary vessels resulting in a deficient blood supply to the heart muscle and not to a spirochaetal involvement of the myocardium.

We shall speak chiefly of the two commonest symptoms. The first is dyspnea. This may be related entirely to effort but often it is of the paroxysmal type coming at night and spoken of as cardiac asthma. These spells of dyspnea may awake the patient from sleep, last 15 to 30 minutes, and then pass away, leaving him greatly exhausted. Profuse sweating may occur with dyspnea of this type and

there is commonly a subjective fear of death. The second important symptom is chest pain. Text books of medicine stress the similarity of pain in aortic syphilis to angina pectoris, and indeed in some instances pain may be brought on by exertion or excitement and radiate in the manner of anginal pain. However, it is often a continuous aching pain or feeling of distress beneath the sternum or in the upper back or arms, bearing very little relation to effort and having no association with dyspnea. Such pain should always put the doctor on his guard to rule out syphilis of the aorta, and aneurysm in particular should be carefully looked for. Other vague symptoms such as giddiness, cough, faintness or the like may mask the more significant complaints of dyspnea or pain.

In the examination of patients with aortic syphilis a great deal can often be learned merely by careful inspection of the chest and neck. If aortic insufficiency is present the neck vessels will show a characteristic quick "flapping" pulsation which may be particularly noticeable in the episternal notch. There may be a visible pulsation to the right of the upper sternum and the apex beat is, in thin chested people, diffuse and wavy or "rocking" in character. These points can be confirmed by palpation. Even with an aneurysm there may be no bulging of the chest wall but a well defined impulse can generally be felt over the upper chest. Cardiac enlargement occurs early with aortic insufficiency and it is in this condition that one finds the most marked degrees of increase in heart size. It is important to emphasize, however, that an aneurysm can be present without cardiac enlargement provided it does

not involve the base of the aorta and thus produce aortic insufficiency. By percussion one can outline the heart and frequently detect evidence of aortic dilatation not elicited by palpation. The most important thing to note on auscultation is the murmur of aortic insufficiency coming early in diastole and usually heard best over the upper sternum or in the 3rd left interspace. When this is well marked it is easily audible, and is then generally accompanied by a systolic bruit giving a so-called to and fro murmur. At times there may be no systolic murmur at the base of the heart and the diastolic murmur may be missed unless one concentrates his attention on diastole and listens carefully with the patient erect or leaning slightly forward and holding his breath following a forced expiration. This is important for such a diastolic murmur may be the tell-tale evidence of an early aortic lesion. Again, before aortic insufficiency is present, there may be a peculiar ringing, bell-like quality to the aortic second sound which, in the absence of hypertension, should suggest dilatation of the aorta resulting from a syphilitic aortitis. When the aortic insufficiency is well marked the characteristic peripheral signs—Corrigan pulse, Duroziez sign, etc.—can be readily detected.

In doubtful cases, or in confirmation of others, a roentgen examination will be a valuable aid to diagnosis. With aortitis or aortic insufficiency there may be only widening of the aortic shadow but often there is as well bulging of the right border of the ascending aorta and flattening of the aortic knob. The degree of aortic dilatation may be much better brought out by a left oblique view in which it is sometimes possible to outline the whole course of the aortic arch. An aneurysm producing no definite physical signs may be entirely missed without roentgenography so that the X-ray should be called on for help in every patient with late syphilis in whom symptoms or physical signs suggest any aortic involvement.

Briefly, electrocardiograms in this condition show nothing characteristic. There is usually well marked left ventricular preponderance and in the instances where the mouths of the coronary arteries are involved there may be abnormalities of the T waves,

at times like that seen in coronary occlusion. The blood Wassermann reaction is positive in 70 to 80% of the cases, so that one must bear it in mind that this test may be misleading when negative even in the face of clinical findings such as a dilated aorta, and aortic insufficiency and the like that strongly suggest a syphilitic etiology.

The importance of an early diagnosis of syphilitic heart disease lies in the fact that a great deal may be accomplished by adequate antiluetic therapy. When properly given this not only may relieve the patient of his symptoms but will in some instances prolong his life. If congestive heart failure has occurred, treatment with digitalis and other measures should be carried out as previously outlined in these publications. After temporary improvement one should start antiluetic therapy with mercury or bismuth and iodides and these should be given for four to eight weeks before starting arsenical therapy. Authorities agree that such "preliminary" treatment lessens the likelihood of a reaction to arsenic later on. The injections of arsphenamine should be small at the start, 0.1 or possibly 0.2 gm. or its equivalent of neoarsphenamine (0.15 to 0.3 gm.) and should be given in courses of eight or ten injections at weekly intervals, never in doses of more than 0.3 or 0.4 gm. of arsphenamine. After such a course the patient may rest for four to eight weeks and then treatment should be resumed. The repeated courses should be administered over a period of two years or longer, depending upon the results of treatment.

Unfortunately not all patients respond well to this program and some lose ground steadily in spite of vigorous therapy. It is certainly true that once a patient with syphilitic heart disease develops congestive heart failure he, in contrast to the rheumatic aortic patient, rarely ever recovers adequate cardiac compensation. This makes obvious the importance of an early diagnosis and the early institution of proper treatment. It cannot be too strongly emphasized that aortic insufficiency in patients over 45 years of age should be regarded as syphilitic if some other etiology is not clearly evident.

M. N. FULTON, M.D.

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